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ACCREDITED EDUCATION INSTITUTES
ENHANCING PATIENT SAFETY THROUGH SIMULATION

Standards for Accredited Education Institutes

2021 Standards | Effective November 2021

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Standards for
**Accredited Education
Institutes**

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Disclaimer

These standards are intended solely as qualification criteria for the Program for the Accreditation of Education Institutes.

“Standard” and its corresponding “Criterion” as used in this manual are defined as a “qualification for accreditation,” not standard of care. In order for an Institute to be found compliant with the AEI Standards and Criteria, the Institute must be able to demonstrate compliance with the criterion as outlined in the Definition and Requirements, Documentation, and Measure of Compliance sections under each criterion.

The Documentation and Measure of Compliance sections under each criterion are intended to provide summary guidance on how compliance must be demonstrated but are not intended to stand alone or supersede the Definition and Requirements.

Acknowledgments

The American College of Surgeons Accredited Education Institutes (AEI) program is thankful to the members of the Accreditation Review Committee and the AEI Standards Revision Project workgroup who were vital to the completion of this standards manual. The AEI program is further grateful to the AEI members who provided thoughtful and essential comments during the public feedback period.

The AEI program acknowledges the many contributions of the following people who participated in the creation of *Standards for Accredited Education Institutes*.

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About the ACS Program for the Accreditation of Education Institutes

The aim of the ACS Program for the Accreditation of Education Institutes is to identify, develop, and promote standards for quality education and training in order to:

1. Enhance quality and promote patient safety through simulation-based education and training
2. Support the efforts of surgeons, residents, medical students, and other members of the surgical team in their continuing professional development and in acquiring and maintaining their knowledge and skills
3. Promote interprofessional education and team training
4. Advance the science of surgical education, training, and assessment
5. Create a system of support for the delivery of state-of-the-art education and training at regional sites

The goals of the ACS Program for the Accreditation of Education Institutes are to:

1. Promote patient safety by serving the education and training needs of surgeons and other learners
2. Ensure the use of appropriate curricula, and teaching and assessment tools, including simulation to assist surgeons and other learners in achieving their personal and continuous professional development goals
3. Develop new education and training programs, technologies, and methodologies
4. Promote scholarly activity and collaboration among the ACS-Accredited Education Institutes

In addition to enhancing patient safety, the program seeks to support surgeons' maintenance of certification requirements, address the competencies that all surgeons and surgical residents need to achieve and demonstrate, and enhance access to contemporary surgical education.

ACS-Accredited Education Institutes Background

The American College of Surgeons began to address the use of simulation to enhance surgical education in 2004 with its development of the Accredited Education Institutes program under the leadership of Carlos A. Pellegrini, MD, FACS, FACS(Hon), Co-Chair, ACS Program for Accreditation of

Education Institutes, and Co-Chair, Ajit K. Sachdeva, MD, FACS, FRCSC, FSACME, MAMSE, Director of the American College of Surgeons Division of Education. The program brought together the thought leaders in the field of surgical-based simulation education and training throughout North America to form a committee to begin looking at the concept of accrediting institutions that provide this type of education.

The committee made several on-site visits to various “skills labs,” as they were initially referred to, in order to see the depth and breadth of the types of facilities that were currently in place. The information gathered was used to begin a benchmarking process to determine the types of requirements institutions that apply for accreditation would need to meet. As a result of those visits and subsequent discussions, the decision was made that the accreditation model should be criterion-referenced, and those that apply for accreditation need to demonstrate how they meet each criterion. These criteria served as a catalyst and beacon for innovative frontline surgical educators and their colleagues to develop centers of excellence delivering quality surgical education using simulation to enhance patient safety.

With approval from the ACS Board of Regents, the program was formally launched in October 2005 at the ACS Clinical Congress in San Francisco, CA. The first set of accreditation decisions was made in June 2006, when six institutions were granted accreditation as ACS Accredited Education Institutes. Since that time, the AEI program, as it is known around the world, has accredited more than 100 institutions in 11 countries.

AEI Accreditation Program

The AEI accreditation program is a voluntary peer-review process. Institutions that successfully complete the process are accredited for a period of five years. To receive accreditation, an institution undergoes a stringent two-part review process that first requires an on-site survey conducted by a team of experienced surgeon site reviewers who have expertise in skills and simulation education. After determining the institution's ability to demonstrate compliance with 19 Criteria in five Standards, a site visit report is reviewed and assessed to determine compliance for each criterion. A formal recommendation is then made to

the Accreditation Review Committee and is voted on by the committee, at which time a decision is made whether to grant a five-year accreditation.

AEI accreditation is granted to Institutes that are committed to enhancing patient safety through the use of simulation-based surgical education and that demonstrate compliance with the standards. Each program must undergo a rigorous evaluation and review of its performance and compliance with the standards. To maintain accreditation, programs must complete compliance reports annually, and submit an application accompanied by a site visit every five years.

Value of AEI Accreditation

AEI accreditation is a demonstration of quality and a commitment to patient safety that provides real value to accredited Institutes. Programs can proudly demonstrate to their university or hospital—as well as to their faculty, community, stakeholders, and industry partners—that they have invested in the infrastructure to ensure that any learner utilizing their facility will receive high-quality simulation-based surgical education and training.

AEI accreditation includes data reporting to and feedback from the Accreditation Review Committee. This reporting allows centers to benchmark and compare their resources, productivity, and educational offerings with similar centers. Data are often used to show value to parent institutions and, conversely, may inform the need to implement improvements or justify the acquisition of more resources.

Being a member of the AEI Consortium gives your team access to other multidisciplinary professionals in the field to share best practices and identify opportunities for collaboration in the areas of curriculum design, assessment, faculty development, research, and technology. It offers a community of support to help further your mission.

Accreditation Process

Processes for accreditation are detailed and updated on the ACS Accreditation Education Institutes website. The AEI program reserves the right to revise accreditation processes as needed.

Categories of Accreditation

There are two categories of accreditation that may be sought: Comprehensive and Focused. Both Comprehensive and Focused Education Institutes must meet rigorous standards for accreditation; however, Comprehensive Education Institutes must meet additional criteria, as compared with Focused Education Institutes.

Comprehensive Education Institutes, as compared with Focused Education Institutes, must serve a wider range of learners, with a broader scope of education and training programs; they must have more space and staff to accommodate the higher volume of learners and scope of educational activities; they must additionally engage in research or other scholarly activities that advance the field of surgical education and training.

Focused Education Institutes are not required to pursue all of the above-noted activities, though they must meet criteria in each of the five standards, as specified in this manual.

Category designations are made at the time of initial application and are retained unless the Institute reapplies as a different designation once the five-year accreditation term has ended.

AEI Program Standards and Criteria Rating System and Accreditation Awards

Ratings for each criterion are assigned based on consensus by the Institute's surveyor(s), the ACS reviewer, and the ACS Accreditation Review Committee.

A “Compliant,” “Noncompliant,” or “Not Applicable” rating is assigned for each criterion. Any criteria with a “Noncompliant” rating is a “deficiency” that will need to be resolved within the noted timeframe. A program receives one of the following Accreditation Awards following the application review and site visit process:

FIVE-YEAR ACCREDITATION

Five-year accreditation is conferred to institutes that comply with all criteria at the time of the application review and site visit. A performance report noting all the areas of compliance as well as a certificate of accreditation are issued.

FIVE YEAR ACCREDITATION WITH A PROGRESS REPORT

Five-year accreditation with a progress report is conferred to an institute when one or more applicable criteria are rated noncompliant. The Institute will receive a performance report noting all the areas of compliance and noncompliance and will be given a six- or 12-month timeframe to provide the data and documentation required to verify full compliance with all applicable criteria. The timeframe for the progress report is dependent on the nature or severity of the deficiencies. During this timeframe, the Institute will be recognized as an AEI-Accredited Institute and a certificate of accreditation is issued. A center that does not resolve its deficiencies within the allotted timeframe is at risk of having its accreditation status discontinued.

ACCREDITATION DEFERRED

Accreditation deferred is conferred when an initial applicant did not provide enough data and documentation required to determine a rating for all applicable criteria. The Institute will receive a report documenting all criteria in question and will be given a six- or 12-month timeframe to provide all necessary data and documentation required to verify full compliance with all applicable criteria. The timeframe is dependent on the amount of missing data and documentation. During this timeframe, accreditation is pending, and an initial applicant will not be recognized as an AEI-Accredited Institute. Centers can also choose to withdraw, improve performance, and then reapply for accreditation.



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1 Personnel

Rationale

Dedicated leadership and administrative staff specifically assigned to the center are essential for the development and success of an Accredited Education Institute. These individuals are responsible for maintaining the accreditation standards, creating and delivering quality education, and managing the daily operations of the simulation center.

Criterion 1.1 Education Institute Director

Definition and Requirements

The Education Institute Director must:

- Have a term of appointment not less than three years
- Have protected time of 25 percent (for Comprehensive Institutes) or 15 percent (for Focused Institutes) dedicated to their role as Education Institute Director
- Be a member of the Education Institute's Oversight Committee
- Have educational qualifications demonstrated by formal training or teaching portfolio; the CV must demonstrate the following:
 - The person is an MD/DO, and if not an MD/DO, a master or doctorate in education or a health care-related field is required
 - And at least one of the following:
 - › Experience using simulation as an educational technique
 - › Experience developing health care education content
 - › Background in educational research

Documentation

Submitted with the application:

- Upload the Education Institute Director's curriculum vitae (CV)
- Upload the Education Institute Director Verification Form (template provided)

Measure of Compliance

- The CV confirms that the educational requirements are met.
- The Education Institute Director Verification Form is completed and signed by the person to whom he or she reports to within the organization.

Criterion 1.2 Education Institute Surgical Director

Definition and Requirements

The Education Institute Surgical Director must:

- Have responsibility for the Education Institute’s surgical education and training programs
- Be a surgeon who is FACS, or who has completed an AEI Simulation Education Fellowship with Associate FACS, or has received an equivalent designation (see Glossary for definition of “Equivalent Designation”)
- Have protected time of at least 10 percent dedicated to their role as Education Institute Surgical Director
- Be a member of the Education Institute’s Oversight Committee

Documentation

Submitted with the application:

- Upload the Education Institute Surgical Director’s CV
- Upload the Education Institute Surgical Director Verification Form (template provided)

Measure of Compliance

- The CV confirms that the Education Institute Surgical Director is FACS, or is a former AEI Simulation Education Fellowship with Associate FACS, or has received an equivalent designation.
- The Education Institute Surgical Director Verification Form is completed and signed by the Education Institute Director and the person whom he or she reports to within the organization.

Criterion 1.3 Administrative and Support Staff

Definition and Requirements

Comprehensive Education Institutes will have administrative and support staff totaling at least 1.5 full-time employees (FTE) who perform the duties below. Two of these staff must be at least 0.5 FTE each allocated to the simulation center. Focused Education Institutes will have administrative and support staff totaling at least 1 FTE who perform the duties below. One staff member must be at least 0.5 FTE allocated to the simulation center.

- General accounting and budgetary functions
- Creation of an annual report and utilization data for the Education Institute
- Assist with preparation and documentation of continuing medical education (CME) activities for courses and participants (when offered)
- Scheduling the use of the Education Institute
- Responsible for daily operations of the simulation center

Documentation

Submitted with the application:

- Upload the Education Institute Administrative and Support Staff Verification Form (template provided)

Measure of Compliance

- The Education Institute Administrative and Support Staff Verification Form is completed and signed by the Education Institute Director.





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2 Governance and Budget

Rationale

Full support and continuous commitment from institutional and/or departmental leadership is vital to maintaining an Accredited Education Institute. This includes sufficient financial resources to successfully meet its mission. The organization is structured in a way that gives the Institute responsibility and accountability for the educational programs and includes an oversight committee to ensure effective use of resources and curricula.

Criterion 2.1 Statement of Purpose

Definition and Requirements

Education Institutes must have a clear statement of purpose that forms the basis for the Institute's goals and programs.

Documentation

Submitted with the application:

- Provide the statement of purpose

Measure of Compliance

- A statement of purpose is provided.
- A description of how the statement of purpose aligns with the Institute's goals and programs is provided.
- A description of any changes that have been made to the statement of purpose within the last five years is provided, if applicable.

Criterion 2.2 Ongoing Financial Resources and Support

Definition and Requirements

Education Institutes must provide:

- An annual budget and a two-year budget projection to confirm that the financial resources necessary to support the Institute are available. Budget deficits of 25 percent or more must be explained and supported in the document and tables.
- A signed Budget Verification Form to confirm (1) the financial commitment to the AEI and, (2) that the budget is accurate and has been reviewed by the most senior official(s) responsible for support of the budget.

Documentation

Submitted with the application:

- Upload the budget table (template provided)
- Upload the Budget Verification Form (template provided)

Measure of Compliance

- A properly completed budget table is provided, where:
 - The annual budget and a two-year budget projection are included
 - Income and expenses are roughly equivalent
 - Revenue meets or exceeds expenses each year over the three-year period (can include subsidy)
 - An explanation is provided if budget deficits exist
- The Budget Verification Form is completed and signed by the most senior official(s) responsible for support of the Institute's budget.
- For reaccrediting institutes, a description of any increases or decreases in the budget since last year is provided.

Criterion 2.3 AEI Oversight Committee

Definition and Requirements

Education Institutes must establish an oversight committee (or similar name) to perform the following functions:

- Assist the Institute's staff in making strategic decisions about resources, including space, funding, faculty/staff, technologies, and devices
- Maintain authority over the curricular offerings by managing, supervising, monitoring, modifying, and adding curricula to meet the needs of learners
- Evaluate the Institute's effectiveness in meeting its mission, including review of evaluation data
- Review ACS accreditation requirements and determine if the standards are continuously being met by all entities participating/using the simulation center

Regular meetings ensure that responsibilities are carried out and standard compliance is met. The oversight committee meets at least twice each calendar year. Meeting minutes must contain sufficient details to accurately reflect the activities of the committee as well as demonstrate compliance with the AEI Standards.

In addition to the oversight committee, programs may choose to establish optional subcommittees or workgroups to manage specific activities. If subcommittees and/or workgroups are utilized, activities and reports related to standard compliance must be presented to and approved by the oversight committee.

Documentation

Submitted with the application:

- Upload an oversight committee roster, including the names of all members and their roles within the Institute or organization
- Upload oversight committee minutes that document the committee's meetings, activities, and participating members

Measure of Compliance

- The oversight committee meets at least twice during each calendar year.
- Committee attendance is documented in the minutes.
- Activities, discussions, and decisions of the committee related to the four required committee functions (as defined in the criterion) are documented in the minutes.
- A description of how the oversight committee addresses the four required committee functions (as defined in the criterion) is provided in the application.
- The Education Institute Director and Education Institute Surgical Director are members of the oversight committee.

Criterion 2.4 Organizational Structure

Definition and Requirements

Education Institutes must provide an organizational chart that clearly illustrates the governance structure of the Education Institute, including how the oversight committee fits into the overall institutional governance structure. The chart must:

- Demonstrate the relationship between the Education Institute and the parent/umbrella organization
- Demonstrate how the oversight committee fits into the overall governance structure
- Include the names and roles of key personnel, including the Education Institute Director, Surgical Director, and administrative and support staff
- Demonstrate how organizations with multiple locations/sites are all unified under the oversight committee
- Demonstrate that the parent institution (the accreditation applicant) maintains authority of the curricula

Documentation

Submitted with the application:

- Upload an organizational chart of the Education Institute

Measure of Compliance

- The organizational chart clearly illustrates the governance structure of the Education Institute as defined in the criterion.
- The Oversight Committee, Education Institute Director, Education Institute Surgical Director, and Administrator all appear on the Institute's organizational chart and are clearly identified.
- A description of how the organizational structure functions to support the Education Institute's goals and educational offerings is provided in the application.



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3 Learners and Educational Resources

Rationale

Education Institutes meet the educational needs of their learners by maintaining appropriate facilities, equipment, and space.

Criterion 3.1 Accreditation

Definition and Requirements

The Education Institute or the parent institution must be accredited by one of the following bodies: Liaison Committee on Medical Education (LCME), Accreditation Council for Graduate Medical Education (ACGME), Accreditation Council for Continuing Medical Education (ACCME), Royal College of Physicians and Surgeons of Canada, as appropriate to learner type. For international Institutes, education and training programs should be accredited by an appropriate organization that is comparable to the accreditation bodies listed above.

Documentation

Not applicable

Measure of Compliance

- The Institute is accredited by at least one of the external bodies defined in the criterion.

Criterion 3.2 Learners

Definition and Requirements

Comprehensive Education Institutes must provide education and training to surgeons in practice and three other learner groups. Focused Education Institutes must provide education and training to surgeons in practice or surgical residents.

Learner Group Categories include:

- Surgeons in practice
- Surgical residents
- Physicians from other disciplines
- Residents and fellows from any discipline
- Medical students
- Allied health professionals
- Nurses
- Health profession students
- Patients and families
- Others

Documentation

Submitted with the application:

- Upload the completed List of Activities (template provided)

Measure of Compliance

- A properly completed List of Activities Template is provided.
- Education is being provided to the required learner groups as defined in the criterion. The percentage and total number of learner encounters for each applicable learner group over the last 12 months is provided in the application. These values match the values calculated in the List of Activities template.

Criterion 3.3 Space Requirements

Definition and Requirements

Comprehensive Institutes must:

- Have no less than 1,200 square feet of contiguous space dedicated to education and training and under the direct control of the Institute; have no less than 4,000 square feet of additional space as needed to meet the education and training needs of the learners, and to accommodate administrative support staff
- Comprehensive Institutes have space to accommodate a minimum of 20 learners at a time for hands-on training
- Have appropriate technology infrastructure to meet education and training goals and objectives
- Provide learners access to the Education Institute sufficient to meet education and training goals and objectives

Focused Education Institutes must:

- Have no less than 800 square feet of contiguous space dedicated to education and training and under the direct control of the Institute
- Have space to accommodate a minimum of six learners at a time for hands-on training
- Have appropriate technology infrastructure to meet education and training goals and objectives
- Provide learners access to the Education Institute sufficient to meet education and training goals and objectives

Documentation

Reviewed during the site visit:

- A tour of the physical space is provided; if the site visit is virtual, a narrated, video tour of the facilities is provided

Submitted with the application:

- Upload at least one floor plan that illustrates all the space occupied by the simulation center
- Upload photos of the various spaces and rooms to support the written descriptions in the application or upload a link to a video that shows the space

Measure of Compliance

- At least one floor plan was provided that illustrates all the space occupied by the simulation center.
- Photographic images or a video of the various spaces and rooms were provided to support the written descriptions in the application.
- A description of how the space serves the education and training needs of learners as well as the administrative needs of staff was provided in the application.
- If the Institute is comprised of multiple sites, a description of how the different sites are utilized, managed, and overseen was provided in the application.

Criterion 3.4 Device Inventory

Definition and Requirements

Education Institutes must list the necessary devices for their existing and planned curricula and have the support to use them effectively to meet their learners' and curricular needs.

Documentation

Reviewed during the site visit:

- Demonstrate that the simulators and devices in the Resource List are in working order during the site visit
- Describe how the simulators and devices meet curricular and learner needs when discussing the Resource List

Submitted with the application:

- Upload the completed Resource List (template provided)

Measure of Compliance

- A properly completed Resource List template is provided.
- The site visit confirms that the simulators and devices are in working order.
- The site visit confirms that the simulators and devices meet curricular and learner needs.



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4 Educational Methodology

Rationale

Education Institutes develop curricula, provide professional faculty development, and utilize appropriate training methods and models to effectively educate learners. Assessments are critical to evaluate the effectiveness of the educational programs being offered by the Institute.

Criterion 4.1 Curriculum

Definition and Requirements

Education Institutes are responsible for providing education to learners. The needs of students and the teaching material will change over time as new knowledge is developed and new skills and/or techniques are developed. Education Institutes respond to these needs by developing curricula addressing the gaps in knowledge. At least two new curricula must be developed during each five-year accreditation cycle.

To develop curricula, Education Institutes must use the steps of curriculum development as described by a recognized curriculum development framework. The new curricula can be developed within the Institute or may be implemented or adapted from more standardized curricula. The required steps include:

1. Needs assessment/gap analysis
2. Development of goals and objectives
3. Use and selection of effective and appropriate education methods and materials
4. Program evaluation and learner assessment

Documentation

- Upload a course intake template or a course development template/form used by your Education Institute when a new course is created; this document is required to demonstrate the curricular development steps taken to develop a course
 - Upload one *blank* course intake template or course development form
 - Upload two *completed* course intake templates or course development forms

Measure of Compliance

- One blank course intake template or a course development form was provided. The template/form includes the four steps of curriculum development.
- Two completed course intake templates or course development forms were provided. The templates/forms include the four steps of curriculum development.
- A description of the process for implementing new courses and programs was provided.
- The institute created or adapted at least two new curricula within the last five years.

Criterion 4.2 Selection of Educational Methods and Models

Definition and Requirements

Education Institutes will provide appropriate methods and animate and inanimate models that are necessary for learning to occur. The models and methods must align with the course goals and objectives, learner groups, and learner experience. In addition, the curricula should be reviewed periodically to determine effectiveness and need for changes.

Documentation

Not applicable

Measure of Compliance

- A description of the methods used to align educational objectives with simulators or models was provided.

Criterion 4.3 Domains of Education

Definition and Requirements

Education Institutes will provide education and training based on learners' needs to address core competencies in domains. These domains can be taught at an individual level or within teams. Coursework or curricula may encompass one or all the domains. Individual curricula may focus on one of the domains but include others to a lesser degree. The domains that must be included in the scope of education at the Institute include:

- Cognitive: Education designed to improve knowledge, comprehension, and critical thinking.
- Psychomotor: Education designed to develop and refine technical skills with a focus on manual dexterity, use of instruments and judgment related to procedural steps. This includes the components of the procedure requiring decision-making and planning.
- Affective: Education designed to conceptualize and internalize attitudes, emotions, and biases. This domain focuses on interpersonal and communication strategies, professionalism, and attitudes designed to create patient-centered and family-centered care and incorporating the principles of diversity and inclusion language. When developing curricula, care should be taken to avoid implicit bias in simulation scenarios. It may also focus on development and assessment of emotional and social intelligence.

Although simulation activities may focus on only one domain at a time, it is expected that Comprehensive Education Institutes will also provide team training. Team training is not a separate domain but frequently incorporates the three domains of education and skills with a focus on the development of teamwork skills and communication, decision making, and/or team strategies in various situations in health care environments to optimize care. Team training can focus on one of the domains, all of the domains, or incorporate the domains with more emphasis on one of the domains.

Documentation

- Upload documentation of curricula, which can be one or more courses, addressing each domain. Documentation may include an intake template, a PDF of a course, or a PPT of a course. The courses must be referenced in your List of Activities.
- Comprehensive Education Institutes must upload additional documentation of a course that teaches team training.

Measure of Compliance

- A List of Activities with the varying domains included was provided.
- Documentation for each domain was provided.

Criterion 4.4 Assessment

Definition and Requirements

In order to provide education to the learners, Education Institutes must ensure there is some form of assessment of the effectiveness of the learning. The process for determining effectiveness can be formative or summative. While not every course offered at the Education Institute requires summative evaluations, the course and program must be evaluated by the learners.

The measurements must include assessment of the learner, evaluation of the faculty, and evaluation of the program or course. The program may be a single course or a group of related offerings. At least some of the learner assessments must occur at a time distant from the course (at least three months after completion).

Documentation

- Upload a written description of a course (or courses), along with the assessments for the course (or courses). Assessments must include one of each type as defined below. A blank and a completed assessment of each type of required.
 - Learner assessment (acceptable assessments include Likert scales, overall grading on a template, transcripts or summaries of debriefing sessions)
 - Faculty assessment (acceptable assessments include learner's assessment of faculty, assessments of debriefing skills using a standardized or locally developed format, peer observation report)
 - Program evaluation (acceptable assessments include end of course evaluation forms for individual or longitudinal courses, descriptive reports of curricular changes between course offerings)
 - Long-term follow-up (assessment can include surveys three months to years after the course, follow-up testing at time distant from the training, institution assessment of clinical outcomes after courses, for example, change in line problems after a central line course, improved patient satisfaction scores after a course focused on the affective domain, operative assessments for skills taught)

Measure of Compliance

- A description of a course (or courses) was provided, along with documentation of each of the four assessment types as noted in the criterion. The assessments may be from a single course or multiple courses.

Criterion 4.5 Faculty Development

Definition and Requirements

Education Institutes must utilize appropriately trained instructors. In order to educate learners, the educators must have both the underlying content knowledge of the subject and skills to teach using simulation. The educators must have knowledge of adult learning and education theories. In order to facilitate this learning, the Education Institutes must provide educators with access to the education required. This includes faculty development courses specific to the use of simulation in education that are either offered in-house or at a facility outside of the Education Institute.

Additionally, Education Institutes must provide ongoing access to education related to adult learning and use of simulation. For new curriculum and new simulators, this may include train-the-trainer instruction tailored to the specific course. The Education Institute can offer educational opportunities on site, at a parent institution, provide resources to access online education, and/or provide information about courses at regional, national, or international meetings.

Measure of Compliance

- An example of a simulation education course was provided with the course description, date(s), participant list, and course schedule.
- An example of a continuing education course offered at the center, parent organization, or at a national/international venue was provided.
- A description of how faculty is initially trained to teach using simulation was provided.
- A description of the ongoing training that is offered to faculty was provided.

Documentation

- Upload an example of a simulation education course, which is a course designed to develop skills for teaching and developing simulation curricula, or a train-the-trainer course, which is a course designed to teach the faculty how to teach a particular course. The example must include a course description, date(s) of course, participant list, and course schedule.
- Upload an example of a continuing education course used to instruct faculty about how to teach specific clinical content through the use of simulation that is offered at the center, the parent organization or at a national/international venue. This is advanced material designed for faculty who have already participated in a simulation education course or train-the-trainer course. The example must include a course description, date(s) of course, and participant list.



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5 Advancement of the Field

Rationale

Conducting research as well as collaborating with other accredited Education Institutes advances the field of simulation-based surgical education and training and assists with enhancing patient safety.

Criterion 5.1 Research or Scholarly Activities in Simulation-Based Education

Definition and Requirements

This criterion is not required for Focused Education Institutes. Comprehensive Education Institutes will pursue research or other scholarly activities such as:

- Developing innovative methodologies for education, training, and assessment
- Developing and evaluating technologies for education, training, and assessment
- Conducting long-term follow-up of learners and assessment of outcomes
- Developing and validating performance standards that provide practical and useful methods to assess competency
- Disseminate the results of simulation-based scholarly activities through publications and presentations and participation in conferences and workshops
- Measuring impacts on quality and outcomes

Documentation

Submitted with the application:

- Upload two examples of how the results of scholarly activities were disseminated over the last five years. This can be through peer-reviewed publications, presentations, and participation in conferences and workshops. The evidence can be an agenda from a conference or a table of contents from a journal.

Measure of Compliance

- A description of the research in simulation-based education that has been pursued over the last five years was provided.
- A description of the plans for research in simulation-based education over the next five years was provided.
- Two examples of research/scholarly activity in simulation-based education from the last five years were provided.
- Two research activities during the accreditation cycle (five years) are required.

Criterion 5.2 Annual Compliance Reports

Definition and Requirements

This criterion is not applicable to initial applicants.

Education Institutes must complete Annual Reports required by the ACS Division of Education.

Documentation

Not applicable

Measure of Compliance

- The institute submitted an Annual Compliance Report during each year of its accreditation term (four reports required during a five-year term).

Criterion 5.3 Involvement in the Consortium of ACS-Accredited Education Institutes

Definition and Requirements

This criterion is not applicable to initial applicants.

Education Institutes must participate in the Consortium by engaging in at least one of the following activities on an annual basis:

- Share knowledge and best practices with members of the Consortium of ACS-Accredited Education Institutes
- Participate in multi-institutional activities of the AEIs, such as research projects or collaborative trainings
- Participate in the Annual ACS Surgical Simulation Summit and other events of the Consortium of ACS-Accredited Education Institutes

Documentation

Submitted with the application:

- Describe any multi-institutional activities the Institute participated in with other AEIs if applicable
- Describe the Institute's participation in the AEI Consortium over the last five years

Measure of Compliance

- Examples of any multi-institutional activities the Institute participated in with other AEIs were provided if applicable.
- At least one person from the Institute attended the Annual ACS Surgical Simulation Summit each year, or there is evidence of collaboration with another AEI as defined in the criterion if representatives from the Institute do not regularly attend the Summit.
- A description of the Institute's participation in the AEI Consortium over the last five years was provided. Participation includes membership on AEI Committees, engagement on the AEI Community, and attendance at in-person events or at virtual webinars and meetings.

Glossary

Accreditation Review Committee (ARC): A standing committee of the American College of Surgeons, the Accreditation Review Committee collects, reviews, and analyzes data from multiple sources about compliance with ACS Program for Accreditation of Education Institutes' Standards and Criteria. An individual committee member reviews all the information collected by the site surveyor, summarizes it, and presents his/her recommendations to the entire ARC. After appropriate deliberation, the ARC makes the final accreditation decision for an institute.

Accreditation Survey (also referred to as a Site Visit): A process to collect data by the surveyors that includes a review of the institution, its documentation, and its center. The survey is done on site at the Institute by specifically trained surveyors whose purpose is to gather data and information, and to confirm what has been described in the application.

Adapted Curriculum: The process of adjusting an existing curriculum to meet the needs of the learners.

AEI Simulation Education Fellowship: A one- or two-year simulation education research fellowship that is offered at an AEI-accredited fellowship program. Only AEIs may apply to accredit their fellowship program.

Annual ACS Surgical Simulation Summit: The annual meeting of the AEI Consortium, which typically takes place over two-and-a-half days every March in Chicago.

Annual Compliance Report: A data-driven report issued by the ACS Division of Education that is required for AEIs to complete during their five-year accreditation term. A total of four reports will be issued.

Assessment: A process by which information is obtained relative to some known objective or goal. An assessment yields information relative to an objective or goal and whether or not it has been met.

Basic Skills: Fundamental areas of knowledge and technical skill that are basic to accomplish a procedure, an interaction, or a medical encounter. May not require the use of any simulators, bench models, and so on.

Budget: The total income and expenses necessary to run the Education Institute. For example, the income and the expense column totals should be equal. The budget is for a defined period of time (usually one year). The budget should include direct expenditures such as salaries, purchases, equipment, and so on. It should also define the types of income received to help run the Institute.

Compliance: The Institute meets the standard of practice as described for the specific criterion.

Commercial Entity: A *commercial interest* is any entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients. *Cited from the ACCME website, accme.org.*

Commitment to Surgical Education: An individual involved in teaching, educational research, program development, or leadership in surgical education that can be documented; includes, but is not limited to, curriculum and program development, education rewards, educational grants, advanced degree in education, publications, and national service in surgical education.

Contiguous Space: The 1,200 square feet of space in the AEI that shares an edge or boundary; that is, neighboring or adjacent.

Course: A formal educational offering by the Education Institute that utilizes a curriculum development model for the development of the content.

Curriculum: A course of study that incorporates the steps of an instructional design model (from gap analysis through performance assessment) offered by the Education Institute.

Device(s): A simulator, training aid, or other piece of equipment used as part of a curriculum.

Education Institute Director: The person who is administratively responsible for the entire enterprise of the Education Institute.

Education Institute Surgical Director: The person who is a practicing surgeon, and is responsible for the surgical program of the Education Institute.

Equivalent Designation (to FACS): For non-U.S. surgeons, equivalent designation would be membership in an organization with standards for membership equivalent to those for Fellows of the ACS. Final determination of whether a designation is equivalent is based upon Accreditation Review Committee discretion.

Evidence: A person, place, or documentation that the Education Institute is able to show the surveyor to demonstrate it is meeting the criterion as described.

Fidelity: (1) The degree to which a model or simulation reproduces the state and behavior of a real world object or the perception of a real world object, feature, condition, or chosen standard in a measurable or perceivable manner; a measure of the realism of a model or simulation; faithfulness. Fidelity should generally be described with respect to the measures, standards, or perceptions used in assessing or stating it. See accuracy, sensitivity, precision, resolution, repeatability, model/simulation validation. (2) The methods, metrics, and descriptions of models or simulations used to compare those models or simulations with their real world referents or to other simulations in such terms as accuracy, scope, resolution, level of detail, level of abstraction, and repeatability. Fidelity can characterize the representations of a model, a simulation, the data used by a simulation (for example, input, characteristic, or parametric), or an exercise. Each of these fidelity types has different implications for the applications that employ these representations.

*Cited - Simulation Fidelity – Getting in Touch with Reality
Geoff Northam, Computer Sciences Corporation, 460 Pacific Highway, ST LEONARDS, NSW 2065 Reference in the article. The result of Fidelity ISG discussions and comments from March 1998 to December 1998. As published in Fidelity Implementation Study Group (ISG) Glossary Version 3.0, December 1998.*

FTE: Full-time employee

Governance Structure: How the Education Institute functions within its larger Institution, and how it interacts with other relevant entities within the Institution. If the Institute has multiple component parts, the governance structure demonstrates how the component parts are related and governed as a single entity.

High Fidelity: Devices that are able to replicate to the highest degree the actual body part or tissue of a human being. For example, computerized (high-fidelity human patient simulators) mannequins that replicate human physiology.

Innovative Technology: A device or method used in the teaching of surgical skills that is considered brand new, or newly discovered, or implemented in a way not previously used to teach a skill.

Institute: The educational entity or center that is applying for accreditation by the ACS Program for Accreditation of Education Institutes.

Institution: An organization having the primary purpose of providing educational programs and/or health care services (for example, a university, a medical school, a hospital, a school of public health).

Learner: The person, regardless of level of education or position, who participates in an educational offering at the Education Institute.

Learner Encounters: When tracking course attendees to help you complete the List of Activities (Criterion 3.2), count learner encounters as opposed to unique learners. For example, if the same person attends two different courses, then that person is considered two learners as opposed to one learner.

Long-Term Follow-Up: systemized effort by an AEI to track and evaluate/assess if the training provided is still in fact used and used correctly after the learner leaves the AEI. The tracking of the performance would be done outside of the training environment within specified time frames.

Low Fidelity: Those devices or objects used in training that differ from the actual physical specimen or organ with respect to its visual appearance, and/or its level of detail when interacting with it. Examples include knot-tying boards, pigs' feet, box trainers, and so on.

Multi-Institutional Activities: Research, grants, models, projects, products, courses, and tools that have been developed with at least one other AEI.

Noncompliance: The Institute is not meeting the requirement of practice as described for the specific criterion.

Original Curricula: "In-house" curricula developed for use at the applicant institute by that institute's or parent institution's faculty and staff, using the processes of curriculum development as outlined in Criterion 4.1.

Outcomes: The final data gathered by the Education Institute that describe the results (outcomes) achieved by the learners after participating in an educational activity.

Oversight Committee: The group of individuals within the structure of the Education Institute that influences all areas of work within the Institute, such as, review assessment data and assist the Institute's administrative staff in making decisions about the learners, curricula, and resources including space, faculty/staff, technologies, and devices.

Parent Organization/Institution: The broader organization or institution within which the Institute is housed. Examples would include the academic institution, hospital, or health care system of which the Institute is a part.

Peer Review: Process by which something proposed (as for research or publication) is evaluated by a group of experts in the appropriate field (*Cited from the Merriam-Webster Dictionary*).

Research: The collection of information about or detailed study of a subject.

Resources: The financial, technical, human, and physical resources available to an Education Institute to deliver its educational activities.

Scholarly Activities: Activities that advance academic inquiry or dissemination of research on a subject.

Simulation: Attempting to predict aspects of the behavior of some system by creating an approximate model of it.

Simulator(s): A device (instrument and/or vehicle) used by an Education Institute to model a behavior or a task on which the learner needs to perform.

Sufficient Access: The learners' ability to access the Education Institute as necessary to meet their education and training needs.

Surgeon: Any general surgeon or surgical specialist.

Surgery: Both general surgery and all surgical specialties.

Surgical Activities: Education or training activities whose primary learner audience is surgeons or surgical residents.

Validate: To establish the soundness of, substantiate, confirm, or corroborate.

Virtual Reality: A computer simulation of a real or imaginary system that enables a user to perform operations on the simulated system and shows the effects in real time.



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